THE BRITISH MUSEUM OF OLD TIME.

part, and each brick pressed well home into its place, so as to cause the mortar or cement to curl out full and flush along the whole line of each bed and joint.

13. The openings in the spandril walls must be set out fair and true with each other, and the entire rings of all set in cement. The triangular 4-inch portion of each spandril must also be set in cement.

14. The mortar and cement flushed out of the beds and joints must be cut off clean with the trowel while wet, and the joints filled and rough pointed with the trowel at once.

15. The bond, and joist timber, must be of the size and scantling figured, and must be cut out of the best crown Memel or Baltic timber, perfectly free from sap, shakes, or large dead knots.

16. The work must be estimated for in one lump sum. Any hoop iron, bond stone, or flags, required for purposes of bond, will be provided to the contractor on the ground; but he must take them from thence and set them in the arch for the sum named in his general estimate.

17. The plans, specification, and sections must be taken according to the full bearing of each on each; and where any discrepancy shall be found to exist, the engineer shall decide its proper meaning.

18. Any alteration in the bond, depth of ribs, form, and number of spandril walls, or any other portion of the work, shall not vitiate this contract; but should more or less work be put into the arch than is shewn by the plans and sections, it shall be ascertained by measurement, and then be added to or deducted from the amount of tender, according to the schedule of prices annexed.

ROBERT RAWLINSON.

N.B. In the report to the Committee, January, 1848, the term, "hollow tile" is used; in this specification, "hollow brick" has been adopted instead.

In that report was given an,—

ESTIMATE OF THE COMPARATIVE COST OF BRICKS AND TILES.

Ceiling of Great Hall.

	per thousand.				
163,973 bricks at 66s...	£541	3	3½		
100,682 tiles at 65s...	359	14	3½		
In favour of tiles.....				181	9 0

Ceiling of two Law Courts.

	per thousand.				
52,800 bricks at 66s...	£174	4	9½		
35,640 tiles at 65s...	115	16	7		
In favour of tiles.....				58	8 2½
Tiles cost less than bricks				239	17 2½

ESTIMATE OF COMPARATIVE WEIGHT OF BRICKS AND TILES.

Ceiling of Great Hall.

	tons.	cwt.	qrs.	lbs.				
163,973 bricks weigh	635	17	3	25				
110,682 tiles weigh..	469	8	0	23				
					166	9	3	2

Ceiling of Two Courts.

	tons.	cwt.	qrs.	lbs.				
52,800 bricks weigh	223	18	2	8				
35,640 tiles weigh..	151	3	0	4				
					72	15	2	4
Tiles weigh less than bricks.....					239	5	1	6

Thus, 146,322 tiles will cost 239*l.* 17*s.* 2½*d.* less than 216,773 bricks; the quantity required to do the work of the tiles and the building will be relieved of a straining weight to 239 tons 5 cwts. 1 qr. 6 lbs.

The greatest pressure the tiles can have to sustain in the great arch is equal to 30 lbs. to the square inch.

I have subjected them to a test of 90 lbs. pressure to the square inch, under which they did not fracture.

N.B. Each hollow tile occupies in construction 192 cube inches of space, and weighs 9½ lbs., having 37.7 cube inches of space in the circular perforation. Each solid brick occupies in construction 121½ cube inches of space, and also weighs 9½ lbs.

Abstract of space occupied and weight.

Hollow tiles 192 cube inches 9½ lbs. weight
Solid brick 121½ cube inches 9½ lbs. weight
70½ cube inches in favour of hollow tile.

Or, rather more than one-third of the weight will be avoided in the arch by the use of hollow tile.

The arch, as executed, required more tile than is specified in this report, on account of the paneling which has been formed in the construction adopted.*

HOLLOW BRICK CONSTRUCTIONS.

In your last week's paper, Mr. Robert Rawlinson mentions that he first saw specimens of the hollow bricks in Mr. Chadwick's office. I imagine that the bricks he there saw were those left by me in the Sanitary Commissioners' office about eighteen months since. The idea of using hollow tubes of clay of large size in construction occurred to me seven or eight years ago. At that time I proposed it to a client of mine, who was about to erect a large quantity of walling, but the misfortune which overtook him lost me that oppor-

* We know so little of Mr. Elmes, beyond his noble work at Liverpool, that the following extract from a letter addressed by him to Mr. Rawlinson may interest our readers. He says, with reference to some observations on painting made by Mr. R.,—"I wish you would try your hand at architecture, and stir up a little spark of feeling for it. Although, in a domestic sense, it must yield the palm to painting, at least when carried beyond mere utility, yet the pleasurable sensations, indescribable almost, produced in a well-proportioned and symmetrically arranged room, to go no further, are worthy of appreciation. Architecture, as a noble science and beautiful art, in the highest sense of those terms, exists, unfortunately, at present, only in ruins or in history and imagination; but utility, and utility alone, will ever save it from utter oblivion, and in all ages it must be acknowledged as indispensable to human existence. These observations cannot apply to painting or sculpture, not that I would part with our handmaidens, but only claim an equal rank and equal consideration. Consider, too, the effect produced by painting and sculpture as auxiliaries to architecture; the first, by rendering the massive wall rich with varied colours, and indicating space beyond so delightful to anticipate, thus charming the eye while the noble subject may interest and instruct the mind;—the latter, devoid of colour, yet pre-eminent in form; the material harmonising with the architecture in massive durability, while the gracefully flowing drapery, the marked expressive countenance, and the apparent capability of motion, all contrast with the greater severity of the architectural frame work. Were this feeling general, alas for gilt frames and watch boxes for statues! The predicted fall of my vaulted ceiling made in Liverpool I find has not been confined to that town; it has been reported in London to have been abandoned. Notwithstanding these idle reports, I am proceeding steadily in my purpose, and with due care and attention, I entertain very little doubt of ultimate success. I shall, however, like to have a little talk with you upon it when we meet."

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